

# REVIEW: Simplifying Square Roots

Name \_\_\_\_\_

## Key Concept and Vocabulary

### Product Property of Square Roots

Algebra:  $\sqrt{xy} = \sqrt{x} \cdot \sqrt{y}$ , where  $x, y \geq 0$

Numbers:  $\sqrt{4 \cdot 3} = \sqrt{4} \cdot \sqrt{3} = 2\sqrt{3}$



### Quotient Property of Square Roots

Algebra:  $\sqrt{\frac{x}{y}} = \frac{\sqrt{x}}{\sqrt{y}}$ , where  $x \geq 0$  and  $y > 0$

Numbers:  $\sqrt{\frac{7}{9}} = \frac{\sqrt{7}}{\sqrt{9}} = \frac{\sqrt{7}}{3}$

## Skill Examples

1.  $\sqrt{18} = \sqrt{9 \cdot 2}$   
 $= \sqrt{9} \cdot \sqrt{2}$   
 $= 3\sqrt{2}$

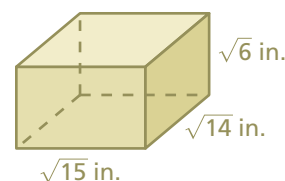
2.  $\sqrt{75} = \sqrt{25 \cdot 3}$   
 $= \sqrt{25} \cdot \sqrt{3}$   
 $= 5\sqrt{3}$

3.  $\sqrt{\frac{5}{36}} = \frac{\sqrt{5}}{\sqrt{36}}$   
 $= \frac{\sqrt{5}}{6}$

## Application Example

4. Find the volume of the rectangular prism.

$$\begin{aligned} V &= Bh \\ &= (\sqrt{15})(\sqrt{14})(\sqrt{6}) \\ &= \sqrt{15 \cdot 14 \cdot 6} \\ &= \sqrt{1260} \\ &= \sqrt{36 \cdot 35} \\ &= \sqrt{36} \cdot \sqrt{35} \\ &= 6\sqrt{35} \end{aligned}$$



- ∴ The volume of the rectangular prism is  $6\sqrt{35}$  cubic inches.

## PRACTICE MAKES PURR-FECT™



Check your answers at [BigIdeasMath.com](http://BigIdeasMath.com).

Simplify the expression.

5.  $\sqrt{80} =$  \_\_\_\_\_

6.  $\sqrt{216} =$  \_\_\_\_\_

7.  $\sqrt{92} =$  \_\_\_\_\_

8.  $\sqrt{245} =$  \_\_\_\_\_

9.  $\sqrt{\frac{13}{25}} =$  \_\_\_\_\_

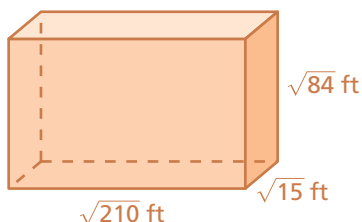
10.  $\sqrt{\frac{29}{64}} =$  \_\_\_\_\_

11.  $\sqrt{\frac{17}{100}} =$  \_\_\_\_\_

12.  $\sqrt{\frac{40}{49}} =$  \_\_\_\_\_

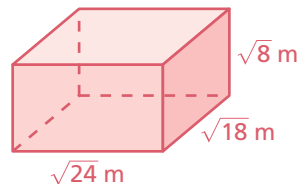
Find the volume of the rectangular prism.

13.



$V =$  \_\_\_\_\_

14.



$V =$  \_\_\_\_\_